LISTING OF THE CLAIMS

This listing of claims, amended as indicated below, will replace all prior versions, and listings, of claims in the application

1-9. (Canceled)

10. (Currently Amended) ~~The circuit according to claim 7, wherein~~ A power delivery system comprising:

an input power conditioning circuit for switching input power to obtain a desired power condition;

a DC bus coupled to the power conditioning circuit for transferring DC power supplied by the power conditioning circuit;

a power control circuit coupled to the power conditioning circuit for controlling input power drawn by the power conditioning circuit;

a first circuit for delivering an input signal indicative of input power to the power control circuit;

a second circuit coupled to the DC bus for delivering an output signal indicative of output power to the power control circuit; and

a power inverter coupled to the DC bus for providing a switched power output, wherein:

the power control circuit operable to control the power conditioning circuit such that input power tracks with output power, and

the power output signal indicative of output power is obtained based on direct measurements of speed and torque of a motor coupled to the power inverter.

11-19. (Canceled)

20. (New) A controller for an electrical power delivery system which provides controlled power to a load, the controller comprising:

an input power conditioning unit adapted for connection to an input power source;

a power control unit coupled to the power conditioning unit for controlling the amount of input power drawn by the power conditioning unit;

a first sensor unit operative to provide a signal indicative of the input power drawn by the power control unit; and

a second sensor unit operative to provide a signal indicative of output power delivered to the load by the power converter to the power control unit,

wherein the power control unit is operable in response to the signals from the first and second sensors to control the power conditioning unit to minimize the difference between the input power drawn by the input power conditioning unit and the power delivered to the load.

21. (New) A power delivery system including the controller according to claim 20, wherein the power conditioning unit is operative to provide DC power, and further comprising:

a power output unit which is adapted to provide power to the load; and

a DC bus coupled to the power conditioning unit for transferring DC power supplied by the power conditioning unit to the power output unit.

22. (New) The power delivery system according to claim 21, wherein the controller comprises a n integrated circuit.

23. (New) The power delivery system according to claim 21, wherein the second sensor unit comprises an estimator circuit coupled to the DC bus and operable to provide the signal indicative of output power based on measurements obtained from the DC bus.

24. (New) A power delivery system according to claim 21, wherein the power output unit comprises a power inverter coupled to the DC bus for providing a switched power output to the load.

25. (New) The power delivery system according to claim 24, further comprising a bus capacitor coupled to an input of the power inverter, wherein the power rating of the bus capacitor is minimized relative to the power capacity of the system.

26. (New) The power delivery system according to claim 24, further comprising an inductor which couples the DC bus to an input of the power inverter, wherein the power rating of the inductor is minimized relative to the power capacity of the system.

27. (New) The power delivery system according to claim 24, wherein the signal provided by the second sensor unit is obtained based on direct measurements of speed and torque of a motor coupled to the power inverter.

28. (New) The controller according to claim 20, wherein the power conditioning unit comprises a power factor correction power circuit.

29. (New) The controller according to claim 20, wherein the first sensor receives an input current signal indicative of input current provided to the power conditioning unit, and an input voltage signal indicative of voltage supplied to the power conditioning unit.

30. (New) The controller according to claim 29, wherein the input current and input voltage are in phase with each other.

31. (New) The controller according to claim 30, wherein the signal provided by the first sensor is obtained through an arithmetic operation involving the input current and the input voltage.

32. (New) The controller according to claim 20, wherein the load to be driven is a motor, and the signal provided by the second sensor unit is obtained based on direct measurements of speed and torque of the motor.

33. (New) The controller according to claim 20, wherein the power conditioning unit delivers a DC output.

34. (New) The controller according to claim 33, wherein the power conditioning unit includes a power factor correction unit.

35. (New) An integrated circuit comprising the controller according to claim 20.

36. (New) A method for controlling power delivered to a load by a power delivery system comprising:

obtaining an indication of input power drawn by the power delivery system from a power source;

obtaining an indication of output power delivered to the load;

controlling a power conversion unit coupled to the input power source to minimize the difference between the input power drawn from the source and the output power delivered to the load, based on the indications of the input and output power.

37. (New) The method according to claim 36, wherein the output power indication is derived from measurements of at least one of a torque and velocity of a motor load.

38. (New) A method for minimizing power rating for a passive component in a power delivery system, comprising:

obtaining an indication of input power drawn by the power delivery system from a power source;

obtaining an indication of output power supplied by the power delivery system; and

controlling a power conversion unit coupled to the input power source to minimize the difference between the input power drawn from the source and the output power based on the indications of the input and output power.

39. (New) The method according to claim 38, wherein the output power indication is derived from measurements of at least one of a torque and velocity of a motor load.